

PROTECTION

fuel; 12 percent for chemicals; 4 percent for sumps; and 1 percent for pits, ponds, and lagoons. Recent estimates are that 85 to 98 percent of the eligible tanks have actually been registered (State Water Resources Control Board staff estimates, 1985).

Estimates vary on how many of the underground tanks are leaking. In the San Francisco Bay area, the regional board's study indicated that 60 percent of the high-priority sites had leaks (SWRCB staff estimate, 1985). Overall, it is currently estimated that 20 percent of the facilities have tanks that leak, but that perhaps one half of those over 10 years of age leak. Thus, the problem tends to worsen with time, so that prevention and correction are critical. Details and costs of the underground container program are discussed further, in Chapter 4.

MASSACHUSETTS AND CAPE COD Overview of Ground Water Resources Massachusetts

As in many of the surrounding northeastern states, ground water is an important public supply in Massachusetts. Approximately one third of the 5.7 million people in the state obtain their water supply from wells. About 24 percent of municipal public supplies come from ground water, and 100 percent of rural domestic supplies are from ground water. About 30 percent of ground water withdrawals are used for industrial supplies, and about 2 percent of ground water withdrawals are used for irrigation. The remaining 70 percent of ground water withdrawal is for public and private water supplies.

Most of Massachusetts is underlain by crystalline, metamorphic, and igneous rocks that are covered by a discontinuous mantle of glacial till and stratified drift sediments. The principal aquifers in Massachusetts can be grouped according to general rock type and stratified glacial drift, sedimentary bedrock, carbonate rocks, and crystalline and bedrock.

Stratified glacial drift aquifers provide water for virtually all public supplies that use ground water. This discontinuous aquifer series consists of layered sand and gravel with some silt and was deposited over bedrock by glacial melt waters at the end of the Pleistocene glaciation. In the southeastern corner of Massachusetts the stratified drift aquifer forms a continuous layer over bedrock, which covers the entire areas of Cape Cod, Plymouth County, and the islands of Martha's Vineyard and Nantucket. These extensive permeable aquifers with shallow water tables are highly susceptible to contamination. The natural water quality in these stratified drift aquifers is